REMARKS

In this Response, Applicants amend claims 1, 9 and 14. Claims 1-15 are currently pending, of which claims 1, 9 and 14 are independent. No new matter has been added. Support for the claim amendments can be found at least in Applicants' Figure 4 and related text. Applicants respectfully submit that the pending claims define over the art of record.

I. Foreign Priority

Applicants claimed foreign priority based on Japanese patent applications filed on October 28, 2002 and November 18, 2002. The Examiner notes that Applicants have not filed a certified copy of the Japanese patent application filed on October 28, 2002, as required by 35 U.S.C. § 119(b). Applicants will file a Request to Retrieve Electronic Priority Application for the aforementioned Japanese patent application.

II. Information Disclosure Statement (IDS)

The Information Disclosure Statement (IDS) filed on April 27, 2005 is objected to as failing to comply with 37 C.F.R. 1.98 (a)(2). The Examiner notes that the IDS has been placed in the application file, but references A3-A6 have not been considered. Applicants herewith submit a supplemental IDS with legible copies of references A3-A6, referred to as B1-B4 in the supplemental IDS. Accordingly, Applicants respectfully request consideration of references B1-B4.

III. Rejection of Claims 1-15 under 35 U.S.C. § 103(a)

Claims 1-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2001/0044042 to Inoue et al. (hereafter "Inoue") in view of U.S. Patent Publication No. 2003/0129475 to Enjoji et al. (hereafter "Enjoji"). Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claims 1-15 as set forth below.

A. Claim 1

Applicants respectfully submit that the Inoue and Enjoji references, alone or in any combination, do not teach or suggest at least the following feature of amended independent

claim 1: "a coolant flow field including two or more inlet buffers separate from each other connected to said coolant supply passage, two or more outlet buffers separate from each other connected to said coolant discharge passage, and straight flow grooves connected between said inlet buffers and said outlet buffers is provided between said first and second metal plates."

With regard to the inlet and outlet buffers recited in previously presented claim 1, the Examiner asserts (Office Action, page 4):

> "Inoue is silent towards the use of inlet and outlet buffers for any of the fluid passage.
> Enjoji et al. teaches the use of buffers as the inlet and outlet regions of the coolant passage grooves in a fuel cell for the benefit of supplying fluids into the surfaces of the separators along the passage grooves uniformly [0008]."

The Inoue reference discusses a sealant for sealing a solid polymer electrolyte membrane in a fuel cell (Inoue, title). The fuel cell includes an anode side diffusion electrode having an anode electrode and a first gas diffusion layer, and a cathode side diffusion electrode having a cathode electrode and a second gas diffusion layer (Inoue, paragraph [0013]). A pair of separators holds the membrane electrode assembly (Inoue, paragraph [0013]). A seal is provided onto the separators (Inoue, paragraph [0013]). The seal makes contact with at least one of the end faces of the first gas diffusion layer and the second gas diffusion layer (Inoue, paragraph [0013]).

However, the Inoue reference does not teach or suggest "a coolant flow field including two or more inlet buffers separate from each other connected to said coolant supply passage, two or more outlet buffers separate from each other connected to said coolant discharge passage, and straight flow grooves connected between said inlet buffers and said outlet buffers is provided between said first and second metal plates," as recited in claim 1. The Examiner acknowledges that the Inoue reference does not teach or suggest inlet and outlet buffers for any of the fluid passages in the fuel cell.

The Enjoji reference does not supplement the Inoue reference in such a way as to cure the deficiency of the Inoue reference with respect to the above feature of claim 1. The Enjoji

reference discusses first and second metal sheet separators provided in a fuel cell (Enjoji, abstract). The Enjoji reference discusses that the fuel gas passage, the oxygen-containing gas passage and the coolant passage are in the form of passage grooves defined in the surfaces of the separators (Enjoji, paragraph [0007]). The passage grooves extend from passage inlets to passage outlets (Enjoji, paragraph [0007]). The Enjoji reference mentions that buffer areas need to be provided around the passage inlets and outlets if the passage inlets and outlets take the form of small openings (Enjoji, paragraph [0008]).

However, the Enjoji reference does not teach or suggest "a coolant flow field including two or more inlet buffers separate from each other connected to said coolant supply passage, two or more outlet buffers separate from each other connected to said coolant discharge passage, and straight flow grooves connected between said inlet buffers and said outlet buffers is provided between said first and second metal plates," as recited in claim 1. Although the Enjoji reference generally mentions buffers areas provided around passage inlets and outlets, the Enjoji reference still does not teach or suggest two or more inlet buffers separate from each other. The Enjoji reference also does not teach or suggest two or more outlet buffers separate from each other.

As such, Applicants respectfully submit that the Inoue and Enjoji references, alone or in any combination, do not teach or suggest "a coolant flow field including two or more inlet buffers separate from each other connected to said coolant supply passage, two or more outlet buffers separate from each other connected to said coolant discharge passage, and straight flow grooves connected between said inlet buffers and said outlet buffers is provided between said first and second metal plates," as recited in claim 1.

In light of the foregoing amendments and arguments, Applicants respectfully submit that the Inoue and Enjoji references, alone or in any combination, do not teach or suggest each and every feature of independent claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claim 1.

B. Claims 2-8

Claims 2-8 depend upon claim 1 and add separate and patentable limitations to claim 1. As such, for this and the reasons set forth above, Applicants respectfully submit that the dependent claims also define over the art of record.

C. Claim 9

Applicants respectfully submit that the Inoue and Enjoji references, alone or in any combination, do not teach or suggest at least the following feature of amended independent claim 9: "said coolant flow field includes two or more inlet buffers separate from each other connected to said coolant supply passage through inlet connection passages, two or more outlet buffers separate from each other connected to said coolant discharge passage through outlet connection passages, and flow grooves connected between said two or more inlet buffers and said two or more outlet buffers."

As set forth above in connection with claim 1, the Inoue and Enjoji references, alone or in any combination, do not teach or suggest two or more inlet buffers separate from each other and two or more outlet buffers separate from each other. Applicants respectfully submit that the foregoing arguments also apply to the above feature of claim 9.

In light of the foregoing amendments and arguments, Applicants respectfully submit that the Inoue and Enjoji references, alone or in any combination, do not teach or suggest each and every feature of independent claim 9. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claim 9.

D. Claims 10-13

Claims 10-13 depend upon claim 9 and add separate and patentable limitations to claim 9. As such, for this and the reasons set forth above, Applicants respectfully submit that the dependent claims also define over the art of record.

E. Claim 14

Applicants respectfully submit that the Inoue and Enjoji references, alone or in any combination, do not teach or suggest at least the following feature of amended independent claim 14: "a coolant flow field including two or more inlet buffers separate from each other connected to said coolant supply passage, two or more outlet buffers separate from each other connected to said coolant discharge passage, and straight flow grooves connected between said two or more inlet buffers and said two or more outlet buffers (is provided between said first and second metal plates."

As set forth above in connection with claim 1, the Inoue and Enjoji references, alone or in any combination, do not teach or suggest two or more inlet buffers separate from each other and two or more outlet buffers separate from each other. Applicants respectfully submit that the foregoing arguments also apply to the above feature of claim 14.

In light of the foregoing amendments and arguments, Applicants respectfully submit that the Inoue and Enjoji references, alone or in any combination, do not teach or suggest each and every feature of independent claim 14. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection of claim 14.

F. Claim 15

Claim 15 depends upon claim 14 and adds separate and patentable limitations to claim 14. As such, for this and the reasons set forth above, Applicants respectfully submit that the dependent claim also defines over the art of record.

CONCLUSION

In view of the foregoing amendments and arguments, Applicants believe the pending application is in condition for allowance.

Any fee due is authorized to be charged to our Deposit Account No. 12-0080, under Order No. TOW-108US from which the undersigned is authorized to draw. If the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely.

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Respectfully submitted,

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